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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/767,466	01/28/2004	Charles Cobb	AFT0003	3625
25235 7590 01/25/2007 HOGAN & HARTSON LLP ONE TABOR CENTER, SUITE 1500 1200 SEVENTEENTH ST DENVER, CO 80202			EXAMINER FERNANDEZ, SUSAN EMILY	
			ART UNIT	PAPER NUMBER
			1651	
SHORTENED STATUTORY PERIOD OF RESPONSE		MAIL DATE	DELIVERY MODE	
3 MONTHS		01/25/2007	PAPER	

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/767,466

Applicant(s)

COBB, CHARLES

Examiner

Susan E. Fernandez

Art Unit

1651

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 20 October 2006.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 5-10 and 21-26 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 5-10, 21-26 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

A request for continued examination under 37 CFR 1.114, including the fee set forth in 37 CFR 1.17(e), was filed in this application after final rejection. Since this application is eligible for continued examination under 37 CFR 1.114, and the fee set forth in 37 CFR 1.17(e) has been timely paid, the finality of the previous Office action has been withdrawn pursuant to 37 CFR 1.114. Applicant's submission filed on October 20, 2006, has been entered.

Claims 1-4 and 11-20 are cancelled. Claims 21-26 are new. Claims 5-10 and 21-26 are pending and examined on the merits.

Claim Rejections - 35 USC § 112

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

Claim 25 is rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

Claim 25 is rendered indefinite by the recitation "the enzyme formulation" which lacks antecedent basis. Parent claims 1 and 9 do not recite an "enzyme formulation," and it is not clear that the recitation "the enzyme formulation" is referring to the dry exogenous phytase enzyme and the dry exogenous cellulase enzyme collectively. Parent claim 5 does not expressly disclose that the two enzymes are present together in a single enzyme formulation.

Claim 7 is confusing since it is unclear whether "the feed treatment steps" refers only to the treatment of the feed mixture with the exogenous enzyme(s) recited in claim 6, and/or also to

Art Unit: 1651

the application of phytase and cellulase to the feed as recited in claim 5. Thus, claims 7 and 23 are rejected under 35 U.S.C. 112, second paragraph.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

Claims 5 and 7-10 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cheng et al. (US 5,939,303) in view of Dees (US 5,698,429) or Cobb et al. (US 6,623,750), and in light of Maenz et al. (GB 2,340,727).

Cheng et al. discloses that “the high phytate content of certain feedstuffs...decreases their value as protein sources...” for a variety of animals, including “**young ruminants**” (column 4, lines 13-18, emphasis added). Moreover, Cheng et al. points out that “treatment of such feedstuffs with the phytases of the present invention will reduce their phytate content by phytase mediated dephosphorylation, rendering the feedstuffs more suitable for use as protein sources” (column 4, lines 18-22). It is through phytase mediated dephosphorylation that phytate (form of phosphorus, see column 1, lines 14-22) is catalyzed to a more easily digestible form (column 1, lines 37-40), thus phytase increases phosphorus digestibility of the feedstuffs. In treating feedstuffs with the phytases disclosed in Cheng et al., the Cheng invention discloses novel feed compositions (column 4, lines 22-24), wherein these feed composition may also contain other

Art Unit: 1651

enzymes such as cellulase and proteases (column 4, lines 24-26). Thus, Cheng et al. teaches applying phytase and cellulase to feed. The phytase may be applied directly to the feedstuff (column 4, lines 26-28). Furthermore, the phytase may be applied in dry form as the enzyme may be dried (column 12, lines 15-16) and "the formulated phytase can be administered to animals...as a powdered supplement to be sprinkled into feed bunks or mixed with a ration" (column 12, lines 36-40).

Cheng et al. differs from the claimed invention in that it does not expressly disclose that the cellulase applied to the feedstuff is dried exogenous cellulase enzyme.

Dees discloses a cellulase which may be present as a dried fermentate of a bacteria (column 10, lines 25-33).

Cobb et al. discloses a method of increasing protein digestibility of a grain in ruminants comprising the steps of treating the grain with the following exogenous enzymes: pectinase, beta-glucanase, amylase, hemicellulase, and cellulase (claim 1). A preferred formulation of this enzyme composition for this method includes dried fermentation extracts and wheat bran (column 8, lines 1-10).

At the time the invention was made, it would have been obvious to have used the dried cellulase compositions disclosed in Dees or Cobb et al. in the feed composition disclosed in Cheng et al. since there would have been a reasonable expectation of success in using any form of cellulose in the feedstuff disclosed in Cheng et al., as long as there is cellulosic activity. One of ordinary skill in the art would have recognized the suitability of using these cellulose compositions in the Cheng feedstuff. Additionally, it would have been obvious to have used the

Art Unit: 1651

Cobb enzyme composition since it would have increased the protein digestibility of grain in ruminants. Thus, claims 5 and 7 are rendered obvious by the references.

Additionally, at the time the invention was made, it would have been obvious to have administered the treated feed obtained by the Cheng invention to dairy cows and beef cattle. One of ordinary skill in the art would have been motivated to do this since it would have improved the digestibility of feed for dairy cows and beef cattle, and since dairy cows and beef cattle are members of the ruminant family which may be fed the Cheng feedstuff (column 4, lines 13-18). Thus, claims 9 and 10 are rendered obvious. Further still, it would have been obvious to have used any phytate-containing animal feed in the invention rendered obvious by Cheng et al., Dees, and Cobb et al., including corn which is administered to ruminants. See Maenz et al., page 6, lines 11-20 which teaches that corn is a phytate-containing food, and Cobb et al., column 2, lines 25-34, which teaches that corn is fed to ruminants. Thus, claim 8 is rendered obvious by the references.

Note that according to M.P.E.P. §2111.03, “the transitional phrase ‘consisting essentially of’ limits the scope of a claim to the specified materials or steps ‘and those that do not materially affect the basic and novel characteristic(s)’ of the claimed invention.” Further still, M.P.E.P. §2111.03 states that “for the purposes of searching for and applying prior art under 35 U.S.C. 102 and 103, absent a clear indication in the specification or claims of what the basic and novel characteristics actually are, ‘consisting essentially of’ will be construed as equivalent to ‘comprising’.” Though the resulting feed mixture rendered obvious by the references includes ingredients other than dry phytase and dry cellulase (particularly Cobb et al.), there is no

Art Unit: 1651

showing that the additional ingredients materially change the characteristics of the applicant's invention.

A holding of obviousness is clearly required.

Claims 5-10 and 21-26 are rejected under 35 U.S.C. 103(a) as being unpatentable over Cheng et al., Dees, and Cobb et al., as applied to claims 5 and 7-10 above, and further in view of Maenz et al. and Masuda (US 3,769,168).

As discussed above, Cheng et al., Dee, and Cobb et al. render claims 5 and 7-10 obvious. However, these references do not expressly disclose that exogenous enzymes pectinase, beta-glucanase, amylase, and/or hemicellulase are applied to the feedstuff, as recited in instant claim 6.

Maenz et al. discloses that phosphate-enriched feed treated with phytases and incorporated in the diets of cattle (abstract and page 10, lines 10-17) may also be treated with multiple enzymes, including cellulase, amylase, pectinase, and beta-glucanase (page 9, lines 12-20). These enzymes "...may help to liberate the phytate from plant bodies rendering it more susceptible to the action of the phytase and/or act upon other of the food components in order to improve their digestibility" (page 9, lines 21-24).

At the time the invention was made, it would have been obvious to have included cellulases such as hemicellulase, and enzymes such as pectinase, beta-glucanase, and amylase to the feedstuff treated with dried phytase as described in Cheng et al. One of ordinary skill in the art would have been motivated to do this since Cheng et al. indicates that additional enzymes may be included in the phytase-treated feedstuff (column 4, lines 24-26), and since such enzymes

Art Unit: 1651

would have helped in liberating phytate from plant bodies in order to allow phytate to be more susceptible to the action of phytase, as pointed out in Maenz et al. Thus, claim 6 is rendered obvious by the references. As the Cobb composition in dry form comprises these enzymes (claim 1), the teachings of Maenz et al. provide further motivation for using the Cobb composition in the Cheng invention. Further still, when the Cobb composition is used in the Cheng invention, instant claims 21-26 are rendered obvious, as the Cobb et al. teaches an enzyme composition for treating feed grain which further comprises wheat bran (column 8, lines 1-10). Even if the Cheng invention were not combined with Cobb et al., it would have been obvious to have included wheat bran in the treated feedstuff of Cheng et al. since wheat bran is known to be a source of amylase, as taught in Masuda, column 1, lines 17-20. Therefore, claims 21-26 are rendered obvious, regardless of whether the enzymatic composition of Cobb et al. is used in the Cheng invention.

A holding of obviousness is clearly required.

No claims are allowed.

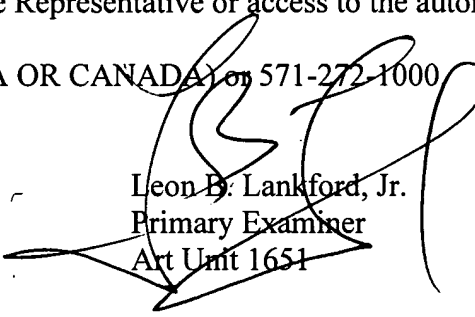
Any inquiry concerning this communication or earlier communications from the examiner should be directed to Susan E. Fernandez whose telephone number is (571) 272-3444. The examiner can normally be reached on Mon-Fri 8:30 am - 5:00 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mike Wityshyn can be reached on (571) 272-0926. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1651

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

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Art Unit 1651



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